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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,440	07/14/2000	Jin-Meng Ho	03493.00084 IDS 2000-0403	5357
28317	7590	06/21/2004	EXAMINER	
BANNER & WITCOFF LTD., ATTORNEYS FOR AT & T CORP 1001 G STREET, N.W. ELEVENTH STREET WASHINGTON, DC 20001-4597			LAM, DANIEL K	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,440

Applicant(s)

HO ET AL.

Examiner

Daniel K Lam

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-11, 15-21, 25-27, 31 and 32 is/are rejected.
- 7) ☒ Claim(s) 6-8, 12-14, 22-24 and 28-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5-8</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract is too long. It should be generally limited to a single paragraph within the range of **50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. Correction is required.
2. The disclosure is objected to because of the following informalities:
On page 23, lines 10 and 11, "unitcast" is misspelled. It should be "unicast" instead. Appropriate correction is required.

Drawings

3. New corrected drawing is required in this application because, in fig. 3, "unitcast" is misspelled. It should be "unicast" instead. The corrected drawing is required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. **Claims 1-5, 9-11, 15-21, 25-27, 31, and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,366,577 issued to Donovan in view of

RFC 2814, SBM (Subnet Bandwidth Manager), written by Yavatkar et al (hereinafter RFC2814), in further view of U. S. Pat. No. 5,638,371 issued to Raychaudhuri et al (hereinafter Raychaudhuri).

Regarding **claims 1 and 17**, Donovan discloses a method and a point coordinating node for providing IP telephony with QoS using end-to-end RSVP signaling and for setting up a side-stream communication session in a basic service set having a defined Quality of Service, the method and the point coordinating node comprising:

- A SIP client 115 that is RSVP enabled (see fig. 3) sends a PATH/SBM 23 message to a local router R1 160 requesting network resources for QoS. Later on, the local router R1 160 receives a RESV 27 message from a remote edge router R2 161. The router R1 160 contains SBM and PC functionalities (Detecting a first Path message and a first Resv message of a RSVP protocol at a designated subnet bandwidth manager in a station having a point coordinator, the first Resv message originating from a RSVP agent of a destination non-PC station in the BSS and requesting resource reservation for setting up a side-stream session between a source non-PC station and at least one destination non-PC station in the same BSS; claims 1 and 17). See col. 7, lines 36-43.
- From the received RESV message that contains a flowspec object, the router R1 160 extracts the QoS and class information and installs QoS in the LAN with the help of DSBM (Extracting at the DSBM a QoS parameter set and a classifier from the first Path/Resv message for the session; claims 1 and 17). See col. 7, line 44.
- Then the LAN QoS reservation is confirmed end-to-end in one direction (When the side-stream session is admitted; claims 1 and 17). See col. 7, line 46.

- The router R1 160 contains SBM and PC functionalities (A designated subnet bandwidth manager; claim 17). Also see col. 7, lines 36-43.

However, Donovan does not explicitly disclose:

- Determining at the DSBM whether to admit the side-stream session to the network based on the QoS parameter set defining the session and a channel status report on a medium access control sublayer of the BSS (claims 1 and 17), and
- Setting up by a QoS management entity (claim 17) of the PC station a virtual side-stream between the source non-PC station and the at least one destination non-PC station for transporting the side-stream session traffic; the DSBM being part of the QME in the PC station (claims 1 and 17).

But RFC2814 explicitly discloses the DSBM, based on the bandwidth availability and the condition of a local PATH state containing the state of the path, grants the reservation request (Determining at the DSBM whether to admit the side-stream based on the QoS parameter set and a channel status report). See section 4.2.1, Basic Algorithm, The Basic DSBM-based admission control procedure 3c, lines 1-6.

Furthermore, Raychaudhuri explicitly discloses a base supervisory MAC processor 188 located in each station (see fig. 9) is responsible for resource allocation and queue management on both the up and down links for each service class with specified service discipline (Setting up by a QoS management entity a virtual side-stream between the source and the at least one destination; the DSBM being part of the QME). See col. 11, lines 12-16.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to incorporate the DSBM-based RSVP QoS reservation mechanism using PATH and RESV messages along with the bandwidth and QoS management capabilities of the QME for couple of key reasons. Firstly, A DSBM receives many RSVP PATH and RESV messages from different clients requesting different bandwidth, it is able to determine whether to admit and fulfill the requested bandwidth or not. Since during the initialization of the DSBM, it obtains network resources information, such as limits on available bandwidth. See RFC2814, section 4.2.1, Basic Algorithm, The Basic DSBM-based admission control procedure 1, lines 1-4.

Secondly, the QME or the supervisory MAC processor provides overall QoS session setup and control management over the wireless MAC layer so that multiple QoS sensitive services can be provided to the upper layers without having them to concern about the details of the wireless MAC layer. See Raychaudhuri, col. 1, line 55-60.

Regarding **claims 2 and 18**, in addition to disclose the limitations in claims 1 and 17 discussed earlier, Raychaudhuri further discloses the supervisory MAC processor provides data to the frame schedule table 134 which is located in the core MAC module. The frame schedule table 134 contains an entry for each stream identified by VC# number (QME assigns a virtual stream identifier VSID) and type (QoS parameters) (Instructing by the QME a frame scheduling entity (FSE) to create an entry corresponding to the VSS in a frame scheduling table of the FSE, the FSE being logically located in the MAC sublayer of the PC station, the entry in the frame scheduling table including the VSID and the QoS parameter). See fig. 6, and col. 10, lines 3-9.

Regarding **claims 3, 5, 19, and 21**, in addition to disclose the limitations in claims 2, 4, 18, and 20 discussed earlier, Donovan further discloses the router R1 160 sending a RESV-CONF 30 management message to the remote client. The RESV-CONF 30 message contains the flowspec object which has information about the session, such as session id, QoS parameters, and traffic classification (Sending a management frame from the PC station to the source non-PC station, the management frame including information relating to a setup of the VSS defined by the VSID, the classifier, and the QoS parameter set; claims 3 and 19. Sending a management frame from the PC or non-PC station to each destination non-PC station in the BSS, the management frame including information relating to a setup of the VSS defined by the VSID; claims 5 and 21). See fig. 3.

Regarding **claims 4 and 20**, in addition to disclose the limitations in claims 3 and 19 discussed earlier, Donovan further discloses:

- The source SIP client 115 receives a RESV/SBM 28 message from the router R1 160. It passes the information to its QoS management entity (receiving the management frame by the source non-PC station and passing the information contained in the management frame to a QME). See fig. 3.

And Raychaudhuri further discloses:

- The supervisory MAC processor 188 (see fig. 9) contains CBR/VBR schedule management 196 that receives its input from different sources, such as ABR, CBR/VBR, etc. Each input is associated with a queue 192a-192b (instructing by the QME a frame classification entity (FCE) to create an entry corresponding to the VSS in a frame classification table of the FCE, the FCE being logically located in the LLC

sublayer of the non-PC station, the entry in the frame classification table including the VSID and the classifier). See fig. 9, and col. 11, lines 18-25.

- The supervisory MAC processor provides data to the frame scheduler table 134 that is located in the core MAC module. The frame scheduler table 134 contains an entry for each stream identified by VC# number (QME assigns a virtual stream identifier VSID) and type (QoS parameters) (Instructing by the QME a frame scheduling entity (FSE) to create an entry corresponding to the VSS in a frame scheduling table of the FSE, the FSE being logically located in the MAC sublayer of the PC station, the entry in the frame scheduling table including the VSID and the QoS parameter). See fig. 6 and col. 10, lines 3-9.

Regarding **claims 9 and 25**, in addition to disclose the limitations in claims 2 and 18 discussed earlier, Donovan further discloses sending a PATHTEAR/SBM 401 message from the local SIP client 115 to the router R1 160 (Detecting a third Path/Resv message at the DSBM, the third Path/Resv message originating outside the DSBM and requesting that a side-stream session be terminated; claim 9). See fig. 4, and col. 8, lines 60-64. All the resources associated with the session are being released (extracting the classifier, finding the VSID, deleting the entry in the frame scheduling table; claim 9). See col. 9, lines 36-40. Furthermore, a PATHREAR/SBM 405 message is sent to the SIP client 115 (sending a management frame from the PC station to the non-PC station sourcing the VSS defined by the VSID). See fig. 4, and col. 9, lines 3-4.

Regarding **claims 10 and 26**, in addition to disclose the limitations in claims 9 and 25 discussed earlier, Donovan further discloses receiving a PATHTEAR/SBM 405

message from the router R1 160 and releasing all the resources associated with the session (receiving the management frame by the source non-PC station, passing the information to the QME, deleting the entries in the frame classification and the frame scheduling tables). See fig. 4, and col. 9, lines 3-4 and lines 10-12.

Regarding **claims 11 and 27**, in addition to disclose the limitations in claims 9 and 25 discussed earlier, Donovan further discloses the router R1 160 sends PATHTEAR 402 and RESVTEAR 406 messages toward the remote client to tear down the session (sending a third management frame from the PC station to each destination non-PC station in the BSS, the third management frame including information relating to a teardown of the VSS). See fig. 4, and col. 8, lines 64-66, and col. 9, lines 4-5.

Regarding **claims 15 and 31**, in addition to disclose the limitations in claims 1 and 17 discussed earlier, Donovan further discloses, before the step of detecting the Resv message at the DSBM:

- The router R1 160 receives a PATH/SBM 23 message from the SIP client 115 (receiving the first Path message at the DSBM, the first Path message being sent from a subnet bandwidth manager (SBM) of the source non-PC station). See fig. 3.
- The router R1 160 sends PATH 24 message to the router R2 161. Router R2 161 sends PATH/SBM 25 message to the destination (propagating the first Path message from the DSBM to an RSVP agent of each destination station, the RSVP agent being an SBM when the destination station is a non-PC station). Also see fig. 3

- The router R2 161 receives RESV/SBM 26 message. It sends RESV 27 message to router R1 160 (receiving the first Resv message at the DSBM, the first Resv message being sent from an RSVP agent of a destination station). Also see fig. 3.
- The router R1 160 receives RESV 27 message and admits the side stream. It sends RESV/SBM 28 message toward the source SIP client 115 (wherein after the step of determining at the DSBM whether to admit the side stream session, sending the first Resv message from the DSBM to the SBM of the source non-PC station). Also see fig. 3.

Regarding **claims 16 and 32**, in addition to disclose the limitations in claims 1 and 17 discussed earlier, RFC2814 further discloses the SBM signaling method and protocol using RSVP-based admission control is especially suitable to be deployed in IEEE 802-style LANs including 802.11 type wireless network (wherein the wireless network is a wireless local area network, WLAN). See abstract lines 1-2.

Allowable Subject Matter

6. **Claims 6-8, 12-14, 22-24, and 28-30** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel K. Lam whose telephone number is (703)


305-8605. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status Information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKL *dke*
June 11, 2004


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 6/16/04